

09-01-00

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Patent Application Transmittal

(only for new nonprovisional applications under 37 C.F.R. 1.53(b))



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Date: August 31, 2000
 Attorney Docket No.: DT-3563

ASSISTANT COMMISSIONER FOR PATENTS
 Box Patent Application
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Sir:

With reference to the filing in the United States Patent and Trademark Office of an application for patent in the name(s) of: **Erwin Manschitz, Peter Hellmann**

entitled: **SWITCHING DEVICE FOR MULTIFUNCTIONAL HAND-HELD MACHINE TOOL**

New Application
 Continuing Application

Continuation Divisional Continuation-in-Part (CIP)
 of prior application serial no. , filed .

[Note: If priority under 35 U.S.C. 120 involves a series of respectively copending applications, then in this amendment identify each and its relationship to its immediate predecessor.]

The prior application is assigned of record to .

This is an application of a small entity under 37 CFR 1.9(f) and the amounts shown in parentheses below have been employed in calculating the fee:

- Small Entity Verified Statement(s) is (are) enclosed.
- Small Entity Verified Statement(s) filed in prior application, status still proper and desired

Patent Application Transmittal
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JC796 U.S. PTO
09/653177
08/31/00



The following are enclosed:

Specification (9 pages) & Abstract
 3 Sheet(s) of Drawings
 12 Claim(s) (including 1 independent claim(s))
— This application contains a multiple dependent claim
— Information Disclosure Statement, PTO-1449 and references;

 This filing fee has been calculated on the basis of the claims as amended by any enclosed preliminary amendment as follows:

Basic Fee, \$690.00 (\$345.00).....	\$ 690.00
Number of Claims in excess of 20 at \$18.00 (\$9.00) each:.....	00.00
Number of Independent Claims in excess of 3 at \$78.00 (\$39.00) each:.....	00.00
Multiple Dependent Claim Fee at \$260.00 (\$130.00).....	00.00
<input checked="" type="checkbox"/> Assignment Recording Fee \$40.00	40.00
<input checked="" type="checkbox"/> Total Filing Fee.....	\$ 730.00

The Commissioner is hereby authorized to charge payment of the following fees associated with this communication and credit any overpayment to Deposit Account No. 50-0955. A duplicate copy of this sheet is enclosed

(x) Any additional filing fees required under 37 CFR 1.16
(x) Any patent application processing fees under 37 CFR 1.17.

Oath or Declaration and Power of Attorney
 New signed unsigned
— Copy from a prior application (37 C.F.R. 1.63(d))

Deletion of Inventors

— Signed Statement attached deleting inventor(s) named in the prior application (37 C.F.R. 1.63(d)(2) and 1.33(b))
— Power of attorney and/or correspondence address was changed during prosecution of the prior application. The new power of attorney is to , Reg. No. . The new correspondence address is indicated above.

Incorporation by Reference (for continuation or divisional application)

The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

A Preliminary Amendment is enclosed.

(Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)

Patent Application Transmittal
(only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Cancel in this application original claims ____ of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

New formal drawings are enclosed.

Certified copy of each foreign priority application on which the claim for priority under 35 U.S.C. 119 is based was filed in prior U.S. application serial no. , filed . A list of said foreign priority application(s) is (are) provided below. Acknowledgement thereof is requested.

<u>Application No.</u>	<u>Filed</u>	<u>In</u>
199 41 156.0	September 3, 1999	Germany

The Commissioner is hereby authorized to charge payment of the following fees during the pendency of the application or credit any overpayment to Deposit Account No. 50-0955. A duplicate copy of this sheet is enclosed.

(X) Any patent application processing fees under 37 CFR 1.17
(X) Any filing fees required under 37 CFR 1.16 for the presentation of extra claims.

Respectfully submitted,

Attorneys for Applicant(s)

By:


Ronit Gillon
Reg # 39,202

SWITCHING DEVICE FOR MULTIFUNCTIONAL
HAND-HELD MACHINE TOOL

Field of Invention

The invention relates to a device in a multifunctional hand-held tool machine for the ON/OFF or changeover switching of individual electrical functions of a system when the user changes the processing mode by actuating a switching device present on the machine.

Background Information and Prior Art

Multifunctional, hand-held tool machines include, but are not limited to, for example, circular saws, orbital sanders, vibrating grinders, drills or impact drills, as well as combination hammers, which are converted over from a drilling to a chiseling operation. It is understood that the latter type of equipment is an example and is not meant to limit the universal applicability of the invention described herein.

In combination hammers, when the drilling operation is selected, a tool and its holding head are driven to rotate with or without impacting. On the other hand, when the chiseling operation is selected, the tool, that is, the chisel is driven exclusively forwards and backwards to impact. The respective tool is changed over from one type of

operation to the other type of operation by rotating a switch mounted at the housing or by shifting a switching key between at least two switching positions. Usually, drilling hammers belong to a class of equipment, which requires a relatively high driving power. In drilling operations, in order to prevent rotation accidents because of blockage of the tool, for example, when it hits iron, due to the reaction moment acting on the housing of the equipment, such tool machines contain means for determining the relative angle of rotation of the housing associated with the driving electronics of the integrated circuit. If the angle of rotation at the housing exceeds a certain value within a short time span of a few milliseconds because the reaction moment has increased suddenly as a result of the blockage of the tool, the drive line between the motor and the tool holder is interrupted by a rapidly acting coupling. Examples of such devices for monitoring the reaction moment are described in detail in the publications WO 88 06 508 A3, DE 43 44 817 C2 or EP 0 686 148 A2 and DE 196 41 618 A1.

If the user selects a different mode of operation, such as the chiseling operation, there is no danger of rotation accidents, since the tool is no longer driven rotationally. The individual electrical system functions must therefore be set differently for the chiseling operation than for the drilling operation. In particular, an unmotivated switching-off of the combination hammer is undesirable since it would unnecessarily slow down the working process. This is particularly true for certain application cases and courses, for which a sudden rotational movement of the tool machine is unavoidable, for example, when dressing the edges and borders of concrete constructions and when breaching walls with a chisel and the like. In other words, when the chiseling operation

is selected, the electrical system function of the time-dependent rotation angle monitoring and, if necessary, interruption of the drive line should be switched off and/or individual operating parameters of the tool machine should be switched over.

Object of the Invention

It is therefore an object of the invention to provide a device for multifunctional hand-held tool machines, by which, when changing a mode of operation, for example, from a drilling to a chiseling operation in a combination hammer, information that ensures that certain electrical system functions are selected in conformity with the operating mode selected, is supplied to the electronics of the machine.

Summary of the Invention

The objective, is accomplished by claim 1, is based on the idea of changing over the selection of the processing mode, which is done manually by the user moving a mechanical turning knob, a sliding key or the like, into a suitable path displacement and transforming this path displacement by a bistable switch, comprising two mutually movable elements, into digital information, by which the electrical system function, appropriate for the operating mode in question, is selected. This can be accomplished, for example, so that, in a combination hammer, when the chiseling operation is selected, the inquiry routine for the triggering criterion of a magnetic coupling is masked. A different possibility consists of repressing the actual switching signal for the magnetic coupling when the chiseling operation is selected.

Brief Description of the Drawings

For a more complete understanding of the invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, in which:

FIG 1 illustrates a first embodiment of an ON/OFF or changeover device for a multifunctional, hand-held tool machine, in accordance with the invention;

FIG 2 illustrates a second embodiment of a changeover device of an ON/OFF or changeover device for a multifunctional, hand-held tool machine, in accordance with the invention;

FIG 3 illustrates a third embodiment of a changeover device of an ON/OFF or changeover device for a multifunctional, hand-held tool machine, in accordance with the invention;

FIG 4 illustrates a forth embodiment of an ON/OFF or changeover device for a multifunctional, hand-held tool machine, in accordance with the invention; and

FIG 5 shows the flow chart of a program sub-routine, in accordance with the invention, for the disconnectable monitoring of the triggering of a release coupling in a combination hammer as a function of critical acceleration values in the event of a blocked tool, determined, for example, by an acceleration measuring device in the housing of the

equipment.

Detailed Description

It should be noted that in all the Figures, corresponding components or structural groups have been given the same reference numbers.

Figure 1 illustrates a first embodiment of a switching-off or changing-over device of the invention. In the housing (not shown) of an electrical combination hammer, there is a changeover knob 1, which can be adjusted between two positions, which are offset from one another usually by 180°, in the directions of a double arrow 7. In a combination hammer, it is possible to choose between the "chiseling" operating mode and the "hammer drilling" operating mode. The changeover knob 1 is provided on the inside of the tool machine, facing the viewer, with an eccentric crank pin 2. Crank pin 2, is, preferably, integrally molded in one piece and a switch rod 3, which can be shifted back and forth in the form of a connecting rod, is rotatably mounted on pin 2 and, when the "hammer drilling" switching position is selected, is in the position shown by the solid lines. On the other hand, if the user selects the "chiseling" mode of operation, the switch rod 3 is shifted to the right in the direction of arrow 9, as shown by the broken line. The switching rod 3 may be guided in a guide (not shown), which may be integrally molded to the inside of the housing of the machine.

At the front end of the switch rod 3, averted from the crank pin 2, a switching magnet, especially a permanent magnet 4, is fixed. The switching magnet 4 acts together with a sensor-controlled switch, especially a Hall sensor 5, which is tied into control and monitoring electronics 6 of the tool machine (in a manner not shown). In the "hammer drilling" switching position, as shown, the permanent magnet 4 is in a position,

remote from the Hall sensor 5. The switch, connected with the Hall sensor 5 is, for example, in the OFF position. If the knob 1 is turned to the "chiseling" position, the switching magnet 4 reaches a region, in which it overlaps with the Hall sensor 5, so that the latter switches over from the OFF (NO) switching position to the ON (YES) switching position.

In the "hammer drilling" switching position, that is, in the OFF switching position of the Hall sensor 5, certain operating parameters of the driving mechanism are selected and, in particular, the reaction moment monitoring becomes effective and ensures that a magnetic coupling (not shown) of the drive line between the driving mechanism and the tool holder is interrupted suddenly, as soon as blockage of the tool, which is dangerous to the user, is detected. On the other hand, in the "chiseling" position of the knob 1, the Hall sensor-activated switch is switched, for example, into the ON position. In this case, the software routine for the reaction moment monitoring is inoperative and/or the actual switching signal for the magnetic coupling is stopped. In other words, when the "chiseling" operating mode is selected, the undesirable switching-off of the combination hammer during a working process is stopped even in the event that, due to the working cycle and/or the substrate, artifact-like sudden rotary movements occur at the machine during the chiseling.

A second embodiment of the invention is illustrated in Figure 2, wherein there is a different construction of the back and forth crank driving mechanism of the connecting rod 3 from the one illustrated in Figure 1. Depending on the spatial

relationships of the machine, this embodiment of the invention, for which the connecting rod 3 is driven over a crank 8, may be preferred.

In the third embodiment of the invention, as illustrated in Figure 3, the permanent magnet 4 is fastened to the interior of the machine directly at the switch 1. The Hall sensor 5 is led over a cable connection 12 out of the driving and monitoring electronics 6 into the immediate vicinity of the knob 1. In the "hammer drilling" position, the permanent magnet 4, again, is remote from the Hall sensor 5; the reaction moment monitoring system is active. If the "chiseling" position is selected, the reaction moment monitoring system is inactive; at the same time, certain other operating parameters are specified.

In the forth embodiment of the invention, as illustrates in Figure 4, the switch rod 3 has at least at the end, facing the knob 1, a partial denticulation 11, which meshes with a gear wheel 10, which is disposed on the inside of the machine and is seated on the axis of the knob 1. With this driving mechanism for the changeover device, a safe and reliable movement and positioning of the switching magnet 4, in relation to the Hall sensor 5, can be guaranteed.

Figure 5, by way of example, illustrates an operating flow chart, in accordance with the invention, for a sub-routine of an algorithm for monitoring critical operating situations, for example, of the above-mentioned dangerous reaction moment when a tool is blocked, in a combination hammer, when the drilling operation is selected

or the interruption of the operating sequence of this sub-routine, in the event that the chiseling operation is selected. In step S1, electronically prepared and digitized actual values, which are measured by one or more acceleration sensors disposed in the equipment housing and which containing representative information about the instantaneous acceleration forces acting on the equipment housing, are made available initially, continuously or in very short time intervals. In step S2, the monitoring sub-routine of a control and monitoring algorithm of the machine is started on the basis of at least one instantaneous actual value. In step S3, the instantaneous value is tested to determine whether the instantaneous actual value differs significantly from a previously checked and processed actual value. If the values differ, in step S4, the determination is made whether the motor of the tool machine is switched on. If this is so, it is determined in step S5, for example, after integrating the measured acceleration value twice, whether, within a time interval of a few milliseconds, an angle of twist of the machine housing is to be expected on the basis of the value measured for the acceleration. If this is so, it is subsequently determined, in step S6, whether the user of the equipment has selected the "chiseling" operation or the "drilling" operation. If the machine is set to the "drilling" operation and the measured actual value of the acceleration is correspondingly high, the magnet coupling, which interrupts the drive line from the motor to the tool holder, is opened, in step S7, so that the rotational centrifugal movement of the machine, which results from the sudden increasing reaction moment and is dangerous to the user of the equipment, cannot come about.

In the examples of the invention described so far, the bistable switch element, which can be switched ON and OFF over a connecting rod 3 by the actuating element, that is, for example, the knob 1, was a Hall sensor switch 5, which can be activated by a permanent magnet 4. It is, however, possible and, for many applications with particularly confined space relationships, of advantage to replace the bistable switch elements by a switch, such as an optical-electronic switch, which can be energized by electromagnetic radiation. In such a case, the permanent magnet 4 can be replaced by a very small semiconductor light source which, when the changeover device is actuated, can be shifted relatively to an assigned photoelectric detecting and switching element.

Furthermore, in a modification of the embodiment of Figure 3, it may be of advantage if the Hall sensor switch 5 is replaced by a permanently installed opto-electronic component. In such a case, the permanent magnet 4 can be replaced by a shadowing element in the form of a platelet or diaphragm element, which protrudes on the inside of the rotary switch 1 and, when the "chiseling" mode of operation is selected, stands in a light path gap between a light source and a photoelectric detection element and, by these means, interrupts the light path between the emitter and detector.

Although the present invention and its advantages have been described in detail, it is understood that various changes, substitutions and alterations can be made herein without departing from the spirit and scope of the invention.

Claims

1. A device in a multifunctional hand-held tool machine for the ON/OFF and changeover switching of individual electrical functions of a system, comprising a bistable switch including two elements that can be moved relative to one another by the actuation of the changeover device and by the changeover device and, wherein the bistable switch, in one switching position of the changeover device, switches individual electrical system functions of the machine into the active position and, in a different switching position, switches these functions into an inactive position.

2. The device of claim 1, wherein the bistable switch is a Hall sensor switch fixed in the machine and wherein, when the changeover device is actuated, the Hall sensor switch is changeable over by a permanent magnet, the magnet being movable closer to and further away from the Hall sensor switch.

3. The device of claim 1, wherein the bistable switch is a switch that is energized by electromagnetic radiation and includes an energizing element, and wherein the energizing element, upon actuation of the changeover device, can be shifted relative to an energizer region of the switch.

4. The device of claim 3, wherein the bistable switch is an optical-electronic switch including an energizing light source and wherein the energizing light source, upon actuation of the changeover device, is shiftable relative to an assigned photoelectric detecting element and switching element.

5. The device of claim 3, wherein the bistable switch is an optical-electronic switch, fixed in the machine, with a shadowing element, and wherein the shadowing element is coupled with the changeover device and, when the changeover device is actuated, in one switching position is positioned in a light path between a light source and photoelectric detector of the switch and, in a different switching position, enables this light path.

6. The device of claim 1, wherein the changeover device has an actuating element that is alternately changeable over by a user and is coupled with a mechanical movement element fixed to the movable element of the bistable switch.

7. The device of claim 6, wherein the actuating element is a sliding key and wherein the sliding key is mounted in the machine housing and connected with a push/pull rod, carrying the movable element of the bistable switch.

8. The device of claim 6, wherein the actuating element is a knob, mounted in the machine housing and on the axis of which an eccentric push/pull rod, carrying the movable element of the bistable switch, is mounted.

9. The device of claim 6, wherein the actuating element is a knob, mounted in the machine housing, provided with a crank pin on the inside of the housing

and is part of a crank gear, actuating a push/pull rod fastened to the movable element of the bistable switch.

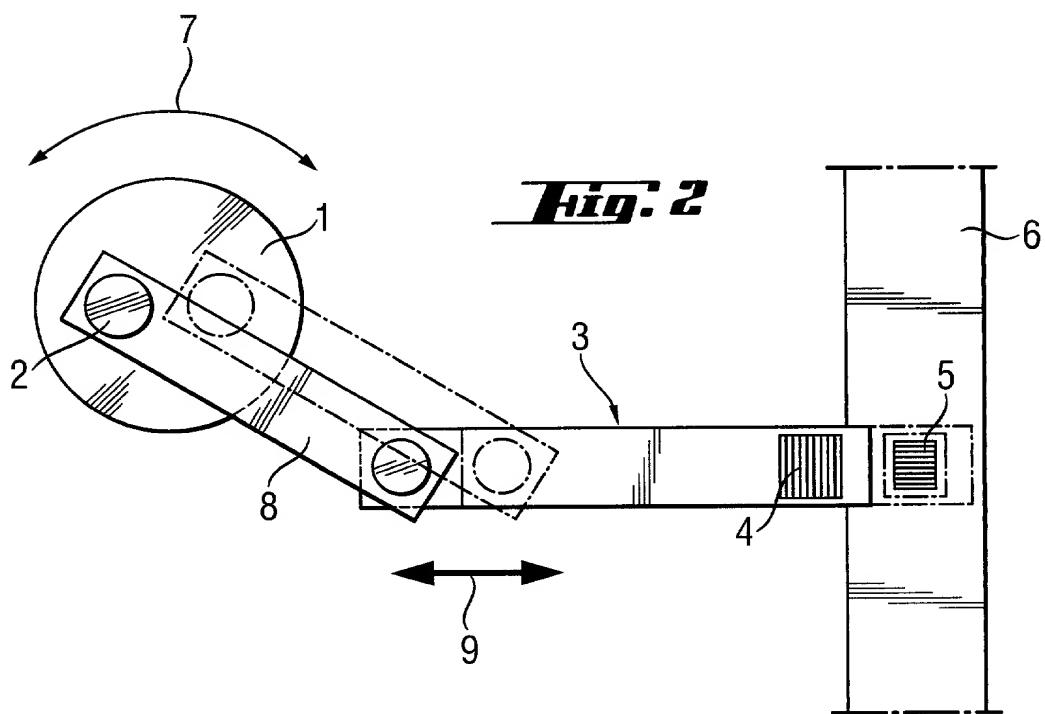
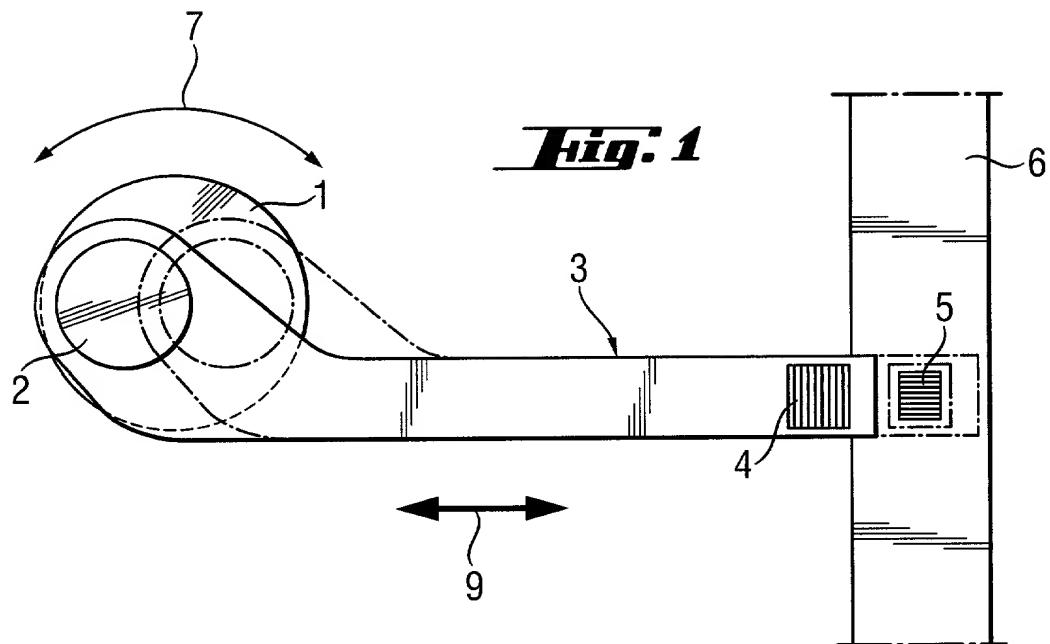
10. The device of claim 6, wherein the actuating element is a knob, mounted in the machine housing and on the axis of which, on the inside of the housing, an at least partially denticulated wheel is seated, meshing with a toothed rack fixed to the movable element of the bistable switch.

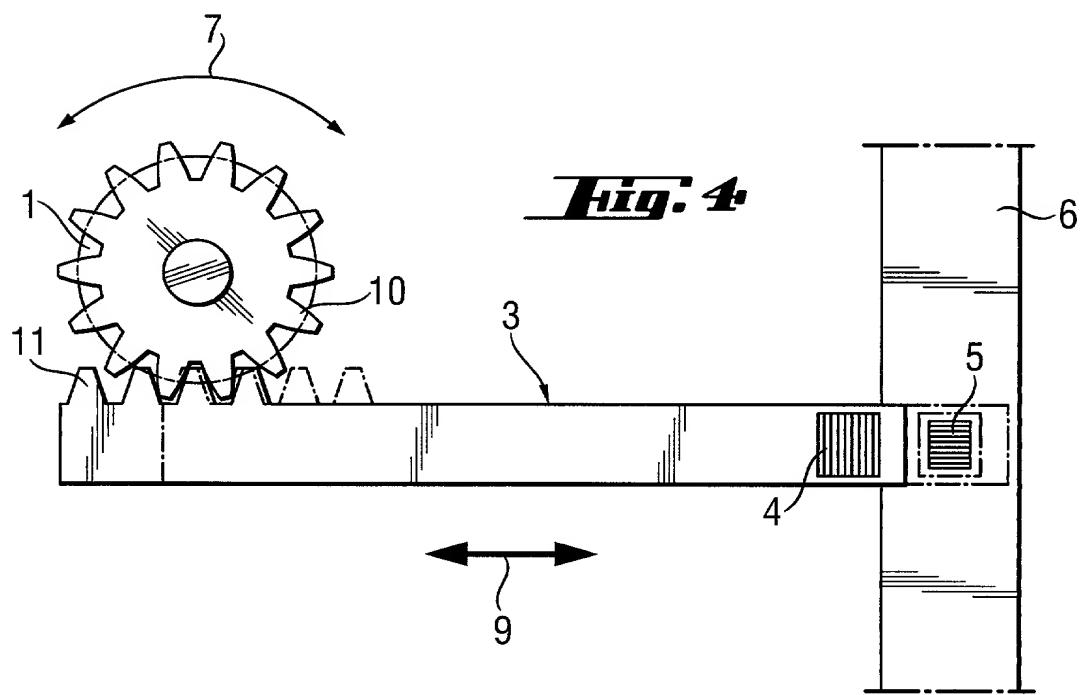
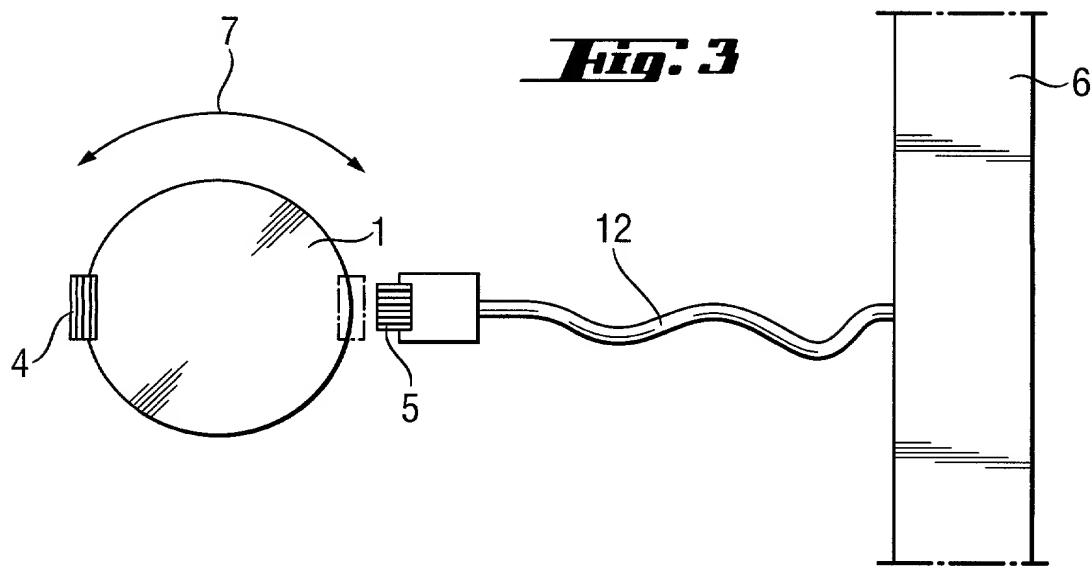
11. The device of claim 6, wherein the actuating element is a knob, mounted in the machine housing and on the axis of which, on the inside of the housing, a holding element for the movable element of the bistable switch, rotatable with the knob, is seated.

12. The device of one of claim 1, wherein the hand-held tool machine is an electrical combination hammer, which can be used alternately as a drilling hammer and a chiseling hammer, wherein, when changing over from the drilling mode to the chiseling mode by actuating the changeover device, the switch that is actuated at the same time, switches at least one system function, of a blocking protection, that is in the active position when the drilling mode is selected, into the inactive position.

Abstract of the Disclosure

The object of the invention is a device, intended for a multifunctional, hand-held tool machine, for example, an electric combination hammer, for the ON/OFF switching or changeover of individual system functions when changing the processing mode, for example, from "hammer drilling" to "chiseling". Pursuant to the invention, the changeover device, which is to be actuated by the user, is coupled with a mechanical driving mechanism, by which a bistable switch, comprising two mutually oppositely movable elements, is actuated. In a combination hammer, the invention guarantees that, when the chiseling operation is selected, certain functions of the system, such as a monitoring of the reaction moment, are interrupted or changed over.





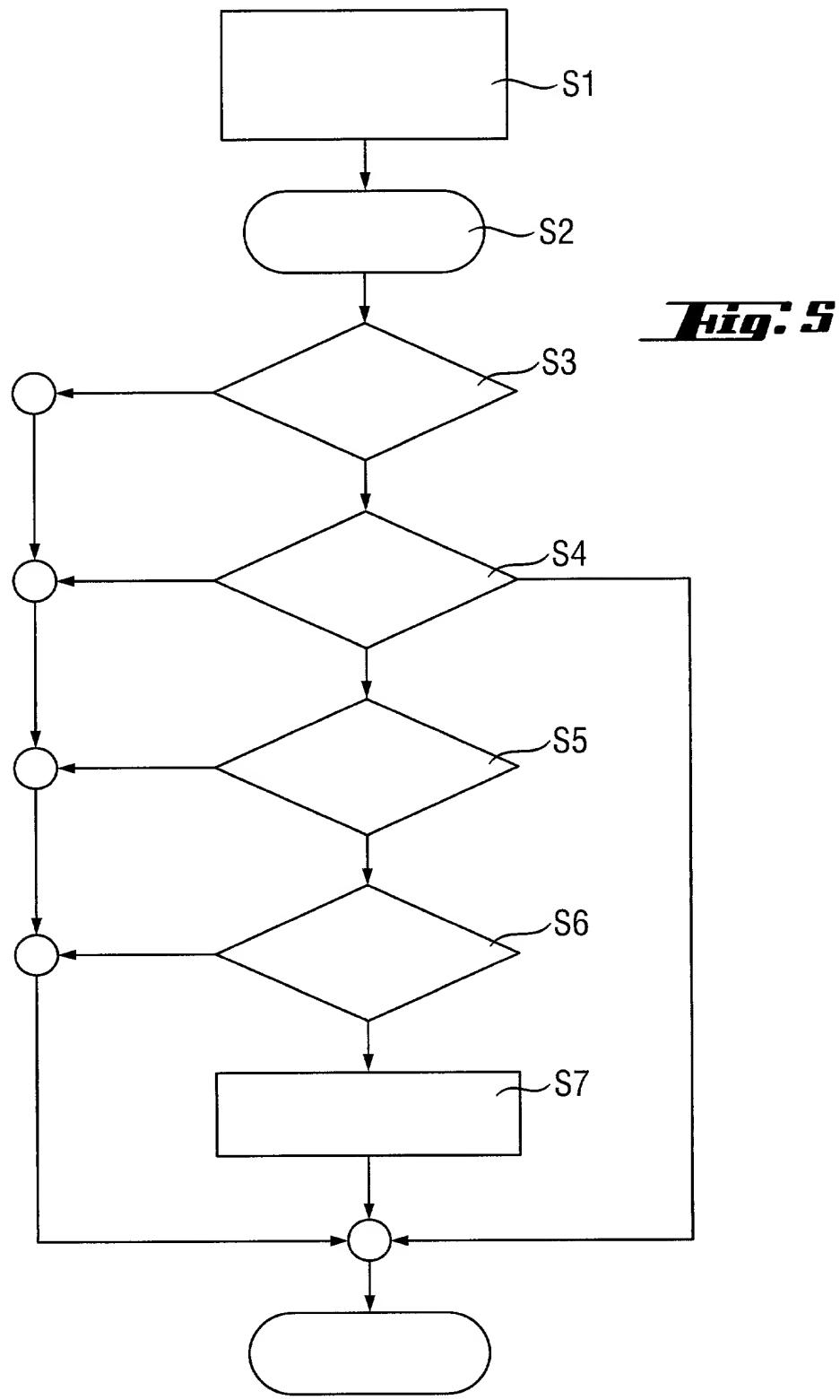


Fig. 5

Declaration and Power of Attorney for Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

UMSCHALTEINRICHTUNG FÜR MULTIFUNKTIONALE
HANDGEFÜHRTE WERKSEUGMASCHINEN

deren Beschreibung
(zutreffendes ankreuzen)

[x] hier beigefügt ist.

[] am _____ unter der
Anmeldungsseiennummer _____
eingereicht wurde und am _____
abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschließlich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Abschnitt 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmelddatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SWITCHING DEVICE FOR MULTIFUNCTIONAL HAND-HELD MACHINE TOOL

the specification of which
(check one)

[X] is attached hereto.

[] was filed on _____
Application Serial No. _____
And was amended on _____
_____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

German Language Declaration

Prior foreign applications
Prioritaet beansprucht

		<u>Priority Claimed</u>		
19942156.0 (Number) (Nummer)	GERMANY (Country) (Land)	03-09-99 (Day/Month/Year Filed) (Tag/Monat/Jahr eingereicht)	<input checked="" type="checkbox"/> Yes Ja	<input type="checkbox"/> No Nein
(Number) (Nummer)	(Country) (Land)	(Day/Month/Year Filed) (Tag/Monat/Jahr eingereicht)	<input type="checkbox"/> Yes Ja	<input type="checkbox"/> No Nein
(Number) (Nummer)	(Country) (Land)	(Day/Month/Year Filed) (Tag/Monat/Jahr eingereicht)	<input type="checkbox"/> Yes Ja	<input type="checkbox"/> No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 112 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)
(Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

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David Toren
Ronit Gillon
Alexander Zinchuk

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Reg. No. 19,468
Reg. No. 39,202
Reg. No. 30,541

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Unterschrift des Erfinders

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Unterschrift des Erfinders

Datum

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DEUTSCHLAND

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DE-83836 OBERMEITINGEN
DEUTSCHLAND

Inventor's Signature

Date

Full name of first or sole inventor

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Residence

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Inventor's Signature

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